AMENDMENTS TO THE SPECIFICATION

Page 1 of the specification and the Abstract of the Disclosure change the title to:

METHOD FOR CUTTING ELASTOMERIC MATERIALS

Page 4, amend paragraph **[0015]** as follows:

[0015] In another embodiment the step of positioning the cutting edge of the ultrasonic knife includes the step of setting a gap distance (d) above the support approximately slightly less than or equal to the thickness of the cord reinforced component, along the region wherein the support is oriented at the angle [[$\theta 1$]] $\underline{\theta 2}$. The method further includes forming one cut end of the segment wherein a plurality of cords is beneath and adjacent to a flat cut surface.

Page 8, amend paragraph **[0038]** as follows:

[0038] With reference to Figure 1, a strip of elastomeric material is illustrated in oblique view. The strip (1) has a transverse width W and an indefinite length designated by the L direction. The strip (1) is transported upon a conveyor means (not shown) in the direction D. The strip (1) comprises one or more elastomeric components. The dotted line (3) shows the location or path of a lateral cut that is to be made across the width of the strip (1) of elastomeric material <u>from edge 4a to edge 4b</u>.

Page 9, amend paragraph **[0042]** as follows:

[0042] In practicing the invention, as shown in Figures 5A through 5C, a strip (1) of elastomeric material is shown on an edge view. As shown in Figure 5A, the preferred method has the strip (1) supported on a second side (4) and a cutting element (120) <u>cutting edge (124)</u> passes through the strip (1) along a path that transverses across the entire width of the strip (1). The cutting element (120) is positioned to cut at a very low skive angle α of less than 30° relative to the first side (2) of the strip (1), preferably the skive angle α is approximately 10° or less.

Page 9, amend paragraph **[0044]** as follows:

[0044] With reference to Figure 5B, as the ultrasonic blades (120) transverses through the strip (1) being cut, the blade (120) will make initial contact with non cord reinforced components prior to meeting with the cord-reinforced component (20). The blade (120) will impact a cord (22), which results in the cord (22) being lifted off of the anvil (110) slightly and thus rides over the blade (120) <u>over the cutting edge (124)</u>. On the opposite side of the cut, the cords (22) are pressed under the ultrasonic blade (120) and occupy the gap (d) that

was provided between the anvil (110) and the blade (120) for this cutting procedure. As illustrated, three or more cords (22) are shown adjacent to the flat surface (122) of the cutting blade (120). The ability of the cords (22) to be lifted over the blade (120) permits the ultrasonic knife blade (120) to pass through the cords (22) without cutting any of the cords (22). This is true because of the separation of the cut ends (12, 14) is created by the sharp cutting edge (121) of the blade (120). By combining the rate of speed at which the blade (120) is moving and the fact that the cords (22) are a more resistant material than the elastomeric rubber, it is possible to easily cut through the rubber without damaging the cords (22). As illustrated in Figure 5C, once the blade (120) is interposed between two adjacent cords (22) the cut surface (6) riding over the blade (120) is allowed to ride freely upward and is lifted slightly. This prevents the cut surface (6) of end 14 from reattaching itself to the other cut end (12) of the elastomeric strip (1).

Page 10, amend paragraphs **[0046]** and **[0047]** as follow:

[0046] As illustrated in the Figure 5C, the ultrasonic blade (120) itself provides a key feature in enabling the strip to be cut in such a fashion that one end (14) of the cut segment (10) lifts and rides over the blade (120) as the blade (120) traverses through the strip while the other cut end (12) is actually held down by the blade (120) as the blade is making the cut. As illustrated, one cord (22) is generally snagged or raised off the anvil (110) slightly as the cutting blade (120) enters the ply edge. This snagged cord (22) often times can be slightly bent even pulled out from the cut ~~surface (56, 58)~~ ends (12, 14). It has been determined in tire building that this cord (22) is of no consequence to the tire's structural integrity in that when the cord is snagged or bent, that portion of the impacted cord (22) will lie on the turn-up side of a bead and is not part of a structural component of the tire or the working component of the tensioned ply because the bend portion of the impacted cord lies at the radially outer portion of the ply turn up. It is important, however, that the cord (22) that is snagged does not prevent good uniform splicing. It has been found by having the cutting edge (121) of the cutting element (120) inclined at an acute angle of approximately 60° or less relative to the width of the ply, the cutting initials from the top surface to the anvil supported surface and can be accomplished with minimal damage to the one impacted cord (22).

[0047] It has been found that by transitioning the support (110) from an angle $\theta 1$ at one surface (111) to $\theta 2$ at the other surface (112) and fixing the gap ~~(2)~~ (d) at the transition location (114), one can predict where the cord (22) impact with the blade edge 121 will occur rather repeatedly. This is important in establishing a precise length of the cut segment (10).

As shown in the cross sectional view of the segment (10), the cutting blade (120) has a flat surface (122) and the lower portion ~~(41)~~ or second side (4) of the strip (1) adjacent to the support (111) at surface (112) is inclined at an angle $\theta 2$ is approximately equal to the lower inclination of the surface (122) of the cutting blade (120) ensures that the elastomeric strip (1) is cut in such a fashion that a flat surface (8) occurs directly above two or more preferably three or more of the ply cords (22). This effectively filets the elastomeric material directly above the ply cords, exposing these ply cords (22) to a flat cut surface (8). This flat cut surface (8) greatly facilitates the ability to create an overlapping splice joint (15) in tire building. This overlapping splice joint heretofore was hindered by the elastomeric components being directly above the lapped ply cords (22). By removing this material, in this unique cutting fashion it is possible to create an overlap cord splice (15) that is stronger than other splices used in radial tire building. It is well known that when the cord splices (15) are overlapped, one can insure a stronger lap spliced joint. Heretofore, these lap splice joints were avoided due to the fact that the multi-layered components would create too much mass imbalance at the lap splice (15) due in part to the amount of material directly above the cord (22). In attempts to reduce this problem, the skive angle α was reduced to a very low angle of 10° or less. Nevertheless, this resulted in still too much material at the lap splice joint creating a slight mass imbalance. Therefore, it had been recommended in the past to create butt splices such that the cords (22) to not overlap. While this prevented the problem of mass imbalance, it creates generally a more difficult splice to repeatedly make in mass production. This is true because the variation in length between the cut end (12, 14). If the segment (10) varies in length by only a few thousandths of an inch, cord spacing can be affected. Overlapping the splice cords prevents this from being an issue. The present invention permits multi-layered components to be lap spliced with overlapping cords without creating an undue mass imbalance. This is due to the fact that the ply (20) as it is being cut is allowed to lift such that the elastomeric material above the cutting element (120) is removed forming a flat cut surface (8) for approximately a length of three or more cords (22) as shown in the illustrated embodiment of Figure 5C. This permits lap splices (15) to be done effectively and efficiently. What is unusual is that this can be accomplished without additional cutting or additional steps. All cutting is done in one simple operation of passing the ultrasonic blade (120) through the multi-layered component or strip (1).

Page 12, amend paragraph **[0048]** as follows:

[0048] With reference to the supporting means (110), it is shown that the supporting

means is angled as previously discussed, the first outer surface (111) is inclined at a first angle $\theta 1$ and the second outer surface (112) is inclined at a second angle $\theta 2$. Internal of the supporting means (110) preferably ~~our~~ are a plurality of holes (116) that intersect the surfaces (111, 112) and are connected to vacuum system. This vacuum system helps keep the strip (1) secure to the support during the cutting procedure and helps assist in this matter. To further assist and holding the elastomeric strip (1) in place during the cutting procedure a retraining means (130) is provided just ahead of the cutting element (120). This restraining means (130) as illustrated, is a wheel (132) that rotates and is moveable along the same path as the cutting means (120). This wheel (132) traverses directly in front of the cutting path (3) but is at a sufficient distance to enable the strip (1) to lift and pass over the cutting blade (120) as the blade is traversing.

Page 12, amend paragraph **[0049]** as follows:

[0049] With reference to Figures 6A and 6B, the joining of the splice ends (12, 14) occurs when the cut-to-length segment (10) is cylindrically formed around a tire building drum ~~5~~ (5) as illustrated. As shown, the tire builder ideally brings the cut surfaces (12, 14) together in a lapping splice relationship along a common plane P. This precisely sets the circumferential length of the segment. The ~~low angle skive~~ surfaces ~~(6) (8)~~ (6, 8) are then pressed together in a technique commonly referred to as stitching.

Page 13, amend paragraph **[0053]** as follows:

[0053] Once cut, the segment (10), when spliced has the cut ends (12, 14) joined and the strip (1) cylindrically forms a tire as previously discussed. The segment (10) as shown in Figures 8A, 8B and 8C can be thick, thin, flat, or irregularly contoured, a single cord reinforced component (20) or a multi-component as discussed. The angular orientation of the surfaces (6, 8) relative to a normal plane NB can be selected for optimum lap joint splicing for the particular strip as shown in Figures 10A and 10B.